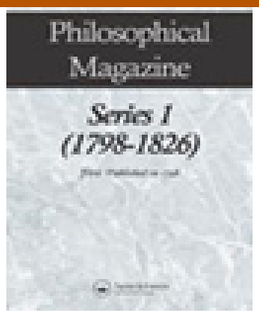

Philosophical Magazine Series 1

ISSN: 1941-5796 (Print) 1941-580X (Online) Journal homepage: http://www.tandfonline.com/loi/tphm12

XIV. A short view of the craniognomic system of Dr. Gall of Vienna

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To cite this article: L. Bojanus M.D. (1802) XIV. A short view of the craniognomic system of Dr. Gall of Vienna , Philosophical Magazine Series 1, 14:53, 77-84, DOI: 10.1080/14786440208676165

To link to this article: http://dx.doi.org/10.1080/14786440208676165

They may be made to appear at pleaſure by the aid of heat, and to diſappear very ſpeedily by putting the writing between the folds of paper ſomewhat moiſt: but I muſt here obſerve, that it requires much care to make the experiment ſucceed completely, and that a certain degree of heat muſt not be exceeded; otherwiſe, the paper being ſcorched, the writing can no longer diſappear.

XIV. *A ſhort View of the Craniognomic Syſtem of Dr.* GALL, *of Vienna. By* L. BOJANUS, *M. D. Member of the Medical Societies of Jena and Paris, and of the Society of the Obſervers of Man* *.

AT all periods, a deſire to find in the exterior of man certain marks indicative of his interior faculties, his paſſions, his morals, &c., has induced the learned to eſtabliſh ſyſtems of phyſiognomy more or leſs ſatisfactory. The moſt ſtriking of theſe ſyſtems are thoſe of Baptiſta Porta and Lavater, the theory of the facial angle, and the ſyſtem of Dr. Gall.

In regard to the firſt, who employed himſelf in comparing the contours of the human figure with thoſe of beaſts, obſervers have determined its value, and conſider his principles as the fruit of a diſordered imagination, as too bold, too little founded on rational obſervation, and abſolutely uncertain in its application.

The ſyſtem of Lavater has had more ſucceſs; but while we revere the genius of that celebrated man, who was truly a great obſerver, we cannot help acknowledging the inſtability of the baſis on which all the opinions he advances reſt; and the mind is not ſatisfied with truths which can be appreciated only by an imagination equally exalted, and a touch ſo delicate as that of the author.

The theory of the facial angle, which embraces a wider field than the ſyſtem of Lavater, leaves us in uncertainty reſpecting the detail of the faculties, and gives us only general points of view; but it preſents us with this truth, of the greateſt importance—that the facial angle increaſes in ſize in proportion to the faculties of animals: and in this it coincides

* From the *Magazin Encyclopédique*, No. 4, Meſſidor, an. 10. Dr. Bojanus in a note ſays: "As this hiſtorical explanation is by no means intended to prove the truth of Dr. Gall's ſyſtem, it can lead to no deciſive opinion on this ſyſtem, which will be eſtabliſhed by its author on ſolid reaſoning and convincing teſtimony. It is neceſſary alſo (ſays he) to obſerve, that the paſſages marked with inverted commas do not reſt on the authority of Dr. Gall."

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in an evident manner with the general reſults of the ſyſtem of Dr. Gall.

Without entering into an exact detail of the laborious route which this learned philoſopher purſued, to be enabled to eſtabliſh a certain baſis in a ſcience hitherto hypothetical, we ſhall examine briefly his fundamental principles.

1. *The Brain is the material Organ of the internal Faculties.*

Far from attempting to decide the metaphyſical queſtions on the nature of the ſoul, or what may be ſuppoſed as the occult cauſe of the internal faculties, we are, however, forced to admit a material organ for their action.

But, as it is obſerved that theſe faculties are found only where the brain exiſts; that they are loſt with it; that diſeaſe and læſion of the brain have a ſenſible influence on their degree and their action; that the volume of the brain increaſes in direct proportion to the faculties of animals; it is not venturing too far to conſider the brain as the material and intermediate organ.

[It might be here objected, that in ſeveral caſes individuals have loſt a conſiderable portion of the ſubſtance of the brain without the faculties being ſenſibly diminiſhed; but it is to be obſerved that the greater part of the cerebral organs exiſt double, and that the obſervations mentioned are not exact.]

2. *The Brain contains different Organs independent on each other for the different Faculties* *.

The internal faculties do not always exiſt in the ſame proportion to each other. There are ſome men who have a great deal of genius without having a memory, who have courage without circumſpection, and who poſſeſs a metaphyſical ſpirit without being good obſervers.

Beſides, the phænomena of dreaming, of ſomnambuliſm, of delirium, &c. prove to us that the internal faculties do not always act together; that there is often a very great activity of one, while the reſt are not ſenſible.

Thus in old age, and ſometimes in diſeaſe, ſuch, for example, as madneſs, ſeveral faculties are loſt, while others ſubſiſt: beſides, a continued employment of the ſame faculty ſenſibly diminiſhes its energy: if we employ another, we find it has all the force of which it is ſuſceptible; and if we return to the former faculty, it is obſerved that it has reſumed

* This idea of independence ought not to deſtroy that principle of animal organiſm, that all the parts are in a reciprocal ratio: it ought to mark only, that the action of one organ does not abſolutely imply the ſame degree in another.

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its uſual vigour. It is thus that, when fatigued with reading an abſtract philoſophical work, we proceed with pleaſure to a poetical one, and then reſume with the ſame attention our former occupation.

All theſe phænomena prove that the faculties are diſtinct and independent of each other, and we are inclined to believe that the caſe is the ſame with their material organs.

[We do not entirely agree with this idea of Dr. Gall, and we believe, on the contrary, that the ſeparation of the material organs ought to be conſidered as the cauſe of the diſtinction of the internal faculties. It appears, to us at leaſt, that by ſuppoſing the faculties themſelves as originally ſeparated we cannot ſave ourſelves from falling into materialiſm, which exiſts when the mind is no longer conſidered as unity.]

3. *The Expanſion of the Organs contained in the Cranium is in the direct Ratio of the Force of their correſponding Faculties.*

This principle, dictated by analogy, reſts on this axiom, that throughout all nature the faculties are always found to be proportioned to their relative organs; and the truth of it is proved in a ſpecial manner by the particular obſervations of Dr. Gall.

It is however to be remarked, that exerciſe has a great influence on the force of the faculties, and that an organ moderately expanded, but often exerciſed, can give a faculty ſuperior to that which accompanies a very extenſive organ never put in action; as we ſee that a man of a weak conformation acquires, by continued exerciſe, ſtrength ſuperior to another of a more athletic ſtructure.

[We muſt here mention an opinion which ſeems to reſult immediately from this principle, and which, however, is falſe: it is, that the volume of the brain, in general, is in the direct ratio of the energy of its faculties. Obſervation has proved to Dr. Gall, that we cannot judge of the ſtrength of the faculties but by the development of the ſeparate organs which form diſtinct eminences in the cranium; and that a cranium perfectly round, of whatever ſize it may be, is never a proof of many or of great faculties.]

I do not recollect to have heard the reaſon aſſigned by Dr. Gall, but, in my opinion, theſe brains may be conſidered as in a ſtate analogous to obeſity; and as we do not judge of the muſcular force of a man or an animal by the volume of their members, but by the development of the muſcles in particular, I think we ought, in like manner, to judge of the

ſtrength of the faculties by the development of the relative organs.

In the laſt place, the 4th principle, the moſt important for practice in regard to the ſyſtem of Dr. Gall, is:

We may judge of thoſe different organs and of their faculties by the exterior form of the cranium.

The truth of this principle is founded upon another, viz. that the conformation of the cranium depends on that of the brain; a truth generally acknowledged, and proved by the anterior part of the brain, by the impreſſions in the anterior part of the cranium, and by other facts.

[There are ſkulls, it is true, in which an external protuberance of the bone correſponds to an interior one; and this irregularity, which is found ſometimes as a diſeaſe, and moſt commonly at an advanced age, when the cerebral organs do not oppoſe the ſame reſiſtance to the cranium, renders the practice of Dr. Gall's ſyſtem, in ſome meaſure, uncertain.]

Guided by theſe principles, Dr. Gall examines the nature of the ſkull, compares the crania of animals and thoſe of men analogous and different in faculties. His reſearches have proved to him, in a manner almoſt inconteſtable, not only the above truths, but that the faculties of animals are analogous to thoſe of man; that what we call inſtinct in animals is found alſo in the latter, ſuch as attachment, cunning, circumſpection, courage, &c.; that the quantity of the organs fixes the difference of the genus of animals, their reciprocal proportion that of individuals; that the diſpoſition originally given to each faculty by nature may be called forth by exerciſe and favourable circumſtances, and ſometimes by diſeaſe, but that it never can be created in the caſe where it has not been given by nature *; that the accumulation of the organs takes place in a conſtant manner from the hind part forwards, from the bottom to the top, in ſuch a manner, that animals in proportion as they approach man in the quantity of their faculties have the ſuperior and anterior part of the brain more expanded; and, in the laſt place, that in the moſt perfect animal, man, there are organs in the anterior and ſuperior parts of the frontal bone, and of the parietals, deſtined for faculties which belong to them excluſively. "It is under the latter point of view that the diſcoveries of Dr. Gall agree perfectly with the theory of the facial angle, which ſeems ſtill further to eſtabliſh the truth of them."

In regard to the details of Dr. Gall's ſyſtem, and the enu-

* The germ of every organ muſt exiſt in embryo, if the expanſion of that organ is to be afterwards called forth.

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meration of the different organs which he found, it is difficult to give an exact and satisfactory deſcription of them, when illuſtrated with the number of facts and examples which he employs to prove, in an evident manner, what he advances; I ſhall however attempt the enumeration, being perſuaded that it will contain ſeveral illuſtrations of the author's manner of conſidering the ſubject, and give a true idea of the method to be purſued to attain to his reſults *.

1. *Organ of the Tenacity of Life.*

The firſt organ which the author thinks he has found is that of the *tenacity of life* (*tenacitas vitæ*): he conſiders the medulla oblongata as the ſeat of it; and as the circumference of the large occipital foramen is in the direct ratio of the extent of the medulla oblongata, he employs the ſize of this hole to judge of the intenſity of the life of an animal.

The obſervations which ſerve to ſupport this opinion are, that this hole is generally larger in the crania of women than thoſe of men; that it is conſtantly large in the cat, the otter, the beaver, the badger, &c., animals well known to have a very tenacious life. Beſides, there are no ſpeedier means of killing an animal than to cut the medulla oblongata.

2. *Organ of the Inſtinct of Self-preſervation.*

A little further forward in the medulla oblongata, at the place where it leaves the brain, the author places the *organ of the love of life*, or *of the inſtinct of ſelf-preſervation.*

As animals furniſh no inſtances of ſuicide, it was only from the human race he could procure examples in favour of this poſition; and ſeveral caſes of ſuicide, in which this part of the brain was diſeaſed, determined him to conſider it as the organ of that faculty: he does not, however, conſider it as an abſolute truth; he waits for further examples to ſerve as proofs.

3. *Organ for the Choice of Nouriſhment.*

The organs for the choice of nouriſhment are found, according to the author, in the quadrigemini tubercles; the anterior of which are larger in carnivorous animals, the poſterior more expanded in graminivorous, and which in omnivorous are of equal ſize.

4. *Cerebral Organs of the external Senſes.*

The middle part of the baſe of the brain is deſtined to the

* Compare the different articles with the correſponding numbers in the figure, Pl. II.

external ſenſes. This is the region from which the nerves diſtributed to the organs of theſe ſenſes proceed.

5. *The Organ of Inſtinct and Copulation.*

The *organ of inſtinct and copulation* is ſituated at the baſe of the occipital bone, behind the medulla oblongata and the large occipital foramen.

This organ never expands but at the age of puberty, and its increaſe has a great influence on the form of the nape of the neck, becauſe to this part of the cranium its muſcles are affixed.

In animals caſtrated before the age of puberty, the expanſion of this organ does not take place. It is certain that the bull has the cheſt much broader than the ox, and that "horſes ſubjected to caſtration before their cheſt is full have that part always ſlender."

In the ape, the hare, and cock, this organ is very apparent; and in pigeons and ſparrows the occipital forms a particular bag, which ſeems to be an appendage of the head; and it is well known that theſe animals are exceedingly ardent in copulation. The ſame diſpoſition is ſometimes found in the cranium of man; and Dr. Gall has in his collection the ſkulls of ſeveral fools, who were diſtinguiſhed by their laſciviouſneſs, and whoſe occipital bone preſents an enormous projection.

6. *Organ of the reciprocal Love of Parents and Children.*

The organ of the reciprocal love of parents and children occupies the whole poſterior and ſuperior part of the occipital: by its poſition it is intimately connected with the preceding organ, the action of which muſt neceſſarily have an influence upon it. "Sometimes its exceſſive expanſion contributes to produce that prolongation of the occipital in the form of a bag, mentioned in the preceding article."

This organ in general is more ſtriking in women than in men, and throughout all nature more ſo in the female than in the male ſex: it is very apparent, in particular, among apes, whoſe love for their young is ſo well known that it has become proverbial

"In general, all animals which ſhow a great deal of attachment to their young are provided with it; and it appears to us that pigeons, the male and female of which both ſit on the eggs, and which feed their young by a ſort of rumination, may be given as an example."

The cuckow, which never rears its young, is almoſt entirely deſtitute of this organ.

7. *Organ*

7. *Organ of Attachment and Friendſhip.*

At the poſterior and middle part of the parietals, and the lateral part of the occipital, is the organ of attachment or friendſhip.

"Its poſition brings it into intimate connection with the two preceding organs, and it appears that theſe organs have an action together, eſpecially in animals deſtined to live in ſociety."

Dogs ſhow the moſt ſurpriſing marks of attachment; and the inſtances are furniſhed chiefly by the barbets, baſſets, and houſe-dogs. Theſe ſpecies, therefore, are diſtinguiſhed by a large head, on which is found the expanſion of this organ behind and above the zygomatic apophyſis. The grehound, which is the leaſt ſuſceptible of attachment, has the head narrower behind, and in general is deſtitute of this organ.

8. *Organ of Courage.*

It is the poſterior and inferior angle of the parietal that correſponds to the angle of courage. It contributes to enlarge the ſize of the head, and to ſeparate the ears from each other. Its proximity to the three preceding organs explains to us the fury of animals in rutting-time, and the exceſs of courage in thoſe which have young, or which protect the female and the individuals of their ſociety.

It is very ſtriking in the hyæna, the lion, the wolf, ſome ſpecies of dogs, and particularly in the wild boar, the temerity of which is well known.

On the other hand, the aſs, the gre-hound, the ſheep, and the hare, which are diſtinguiſhed by their timidity, are entirely deſtitute of this organ: their head is ſtraight poſteriorly, and their ears are very near to each other.

A very ſurpriſing phænomenon ſeems to ſupport the opinion of Dr. Gall on the ſeat of this organ: it is a certain involuntary motion of man when he loſes courage. He ſcratches behind his ears, as if deſirous to excite the action of the organ which gives him that faculty.

[We have remarked a movement in cats which appears to have ſome reſemblance to the above, and which relates to the organ of attachment. When fawning on man, they always preſent the poſterior part of the head to rub it againſt him.]

9. *Organ of the Inſtinct to aſſaſſinate.*

Before the organ of courage, towards the middle of the lateral part of the parietals, reſides the organ of the inſtinct to aſſaſſinate.

It appears in all carnivorous animals which live on prey. Dr. Gall found it in the crania of ſeveral aſſaſſins who had been executed.

10. *Unknown Organs.*

Two organs which correſpond to the temporal bone are as yet unknown in regard to their functions.

11. *Organ of Cunning.*

The organ of cunning occupies the anterior and inferior part of the parietals: it appears in all animals diſtinguiſhed by that faculty; ſuch as the fox, polecat, domeſtic cat, the diver*, and is in intimate connection with the *organ of theft*, which conſtitutes a prolongation of it towards the orbit, and which is found in the cat, ſome dogs, and the magpie.

It is, perhaps, to the development of this organ that we ought to aſcribe the great width in the heads of the Calmoucs, among whom a propenſity to thieving is a national characteriſtic.

12. *Organ of Circumſpection.*

The organ of circumſpection is found in the middle of the parietals, above the organ of cunning and that of the inſtinct of aſſaſſination.

The exceſſive development of it produces irreſolution; want of it, ſtupidity: it is very ſtriking in the chamois goat, and roe-buck, the circumſpection of which is ſingular, and which never travel on an unknown road without great precaution.

It is found alſo in animals which do not quit their habitations but in the night-time, ſuch as the owl, otter, &c.

[To be continued.]

XV. *Proceedings of Learned Societies.*

ROYAL ACADEMY OF SCIENCES, BERLIN.

THIS Academy has propoſed the following as ſubjects for

Prize Queſtions:

I. The Mathematical Claſs offers a triple prize for the beſt diſſertation on the obliquity of the ecliptic.

Papers on this ſubject will be received till the 1ſt of May 1806.

* One obſervation difficult to be arranged is, that Dr. Gall always found this organ developed in poets: he gives no explanation, but his obſervation is correct.

II. The